

REMARKS

Claims 1-51 and 54-86 are presently pending in this application. Claims 52, 53 and 87-90 have been cancelled without prejudice to pursuing these claims in a continuation application. Claims 1, 5-9, 19, 20, 22, 25-27, 34, 38-40, 47-49, 51, 54-56, 60-63, 72, 73, 75, 78, 79, 85 and 86 have been amended to cover a reactor having a reaction vessel. The amendments to these claims were not made for the purposes of patentability because all these claims were allowed or indicated as being allowable, and the amendments to these claims are not narrowing amendments. Claim 48 has been amended to clarify certain aspects of this claim, and claims 49, 51 and 54-56 have been amended to correspond to amended claim 48.

The undersigned would like to thank Examiner Leader for holding a personal interview on 23 February 2005. During the interview, claim 48 was discussed in light of U.S. Patent No. 6,391,166 issued to Wang ("Wang"). This paper constitutes the Interview Summary in addition to responding to the outstanding Office Action.

The status of the application in light of the Office Action dated 10 January 2005 is as follows:

(A) Claims 48-52 were rejected under 35 U.S.C. § 102(e) over Wang.

(B) Claims 1-48 and 57-86 were allowed, and claims 53-56 were indicated as being allowable if rewritten in independent form.

A. **Response to Section 102 Rejection—Wang**

Claims 48-52 were rejected under Section 102 over Wang. Claim 48 is the independent claim subject to this ground of rejection, and thus the following remarks are directed toward claim 48 in particular.

Amended claim 48 is directed to a reaction vessel for an electrochemical processing chamber comprising (a) a container having an upper portion and a lower portion, (b) a plurality of compartments in the lower portion of the container, (c) a plurality of separate electrodes in the compartments, (d) at least a first ion-membrane, and (e) a fluid flow system. The compartments are located in the lower portion of the

container and include a first electrode compartment in which a first electrode is positioned and a second electrode compartment in which a second electrode is positioned. The ion-membrane is between the first electrode and a weir, and the ion-membrane allows selected ions to pass from the electrode compartment to the upper portion of the container. The fluid flow system is configured to (1) direct a first fluid flow through the first and second electrode compartments, and (2) direct a second fluid flow through the upper portion of the container. The ion-membrane separates the first fluid flow from the second fluid flow.

Claim 48 is patentable over Wang under Section 102 because this reference fails to disclose or suggest an ion-membrane between an electrode and the weir. With respect to Figure 17 of Wang, this reference discloses an apparatus having "a diffuser ring 112 . . . above each anode to make the flow rate uniform along its cylindrical wall." Wang further discloses that the diffuser can be a ring having a plurality of holes or a porous material with porosity in the range of 10% to 90%. In either case, the processing fluid flows through the diffuser ring to provide a uniform flow rate. In contrast to Wang, the ion-membrane of claim 48 separates the first and second fluid flows such that ions, but not fluid, can pass across the ion-membrane. Claim 48 is accordingly patentable over Wang under Section 102.

Claim 48 is also patentable over Wang under Section 103 because it would not have been obvious to modify Wang to further include a first ion-membrane between a first electrode and the weir. Wang appears to disclose directing a fluid flow upwardly through one or more electrode compartments and over a weir. If an ion-membrane were substituted for the "diffuser 112" disclosed in Wang, it is believed that the ion-membrane would prevent the processing fluid from flowing through Wang's concentric cylinders to the wafer. Such a result is counter to Wang's teachings of flowing the fluid upwardly through concentric cylinders, and thus it would not have been obvious to make such a modification to Wang. Moreover, claim 48 is further patentable over Wang under Section 103 because it would not have been obvious to modify Wang to have a fluid flow system that directs a first fluid flow through the electrode compartments and a second fluid flow through an upper portion of the container such that the ion-membrane

separates the first fluid flow from the second fluid flow. Wang fails to teach anything with respect to directing a second fluid flow through the upper portion of the container such that an ion-membrane separates the second fluid flow from the flow in the electrode compartments. Claim 48 is accordingly patentable over Wang under Section 103. Thus, the rejection of claims 48-51 and 54-56 over Wang should be withdrawn.

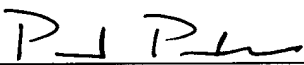
B. Allowed Claims and Allowable Subject Matter

The undersigned thanks the Patent Office for allowing claims 1-47 and 57-86, and indicating that claims 53-56 present allowable subject matter. Claims 1-47 and 57-86 are still in condition for allowance because the foregoing amendments to all of the previously allowed claims are not directed to the subject matter that distinguishes these claims over the references of record. Claims 53-56 have not been rewritten in independent form, but rather these claims depend from amended claim 48.

In view of the foregoing, the pending claims comply with 35 U.S.C. § 112 and are patentable over the cited art. The applicants accordingly request reconsideration of the application and a Notice of Allowance. If the Examiner has any questions or believes a telephone conference would expedite prosecution of this application, the Examiner is encouraged to call Paul T. Parker at (206) 359-3258.

Respectfully submitted,
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